Session 14

Holistic Disaster Recovery: Creating a More Sustainable Future

Future Trends and Implications **Time: 3 hours**

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Objectives:

14.1 Discuss the effects of changing demographics

14.2 Discuss the role of technology in recovery

14.3 Discuss the concepts of professionalism and accreditation

14.4 Discuss the role of academia in recovery

14.5 Improving the of disaster recovery model in the United States

Scope: The long-term success of incorporating sustainability into the recovery process necessitates understanding future trends and their potential implications. The ability to recognize how these trends may affect sustainable recovery practices will shape the effectiveness of future recovery efforts. **Specific factors to consider include:**

- Changing demographics;
- The role of technology;
- The professionalization of emergency management;
- The role of academia in recovery; and
- The future of disaster recovery in the United States.

Required Reading:

Student Readings:

Becker, William S. 1994. The Case for Sustainable Redevelopment. Environment and Development. Nov. 1-4.

Cutter, S.L. 2001. *American Hazardscapes: The Regionalization of Hazards and Disasters.* Washington, D.C.: Joseph Henry Press. Chapter X (summary table).

Godschalk, David. 2001. Natural Hazards, Smart Growth, and Creating Resilient and Sustainable Communities in Eastern North Carolina. Pp. 271-282. In *Facing our Future: Hurricane Floyd and Recovery in the Coastal Plain.* John Maiolo, John Whitehead, Monica McGee, Lauriston King, Jeffrey Johnson, and Harold Stone. Greenville, North Carolina: Coastal Carolina Press.

Mileti, Dennis. 1999. *Disasters by Design: A Reassessment of Natural Hazards in the United States.* Joseph Henry Press: Washington, D.C. Chapter 8. Innovative Paths and New Directions. Pp. 241 – 265. Chapter 9. Getting from Here to There. Pp.267 – 288.

Instructor Readings:

Advisory Committee on the International Decade for Natural Hazard Reduction. 1987. *Confronting Natural Disasters: An International Decade for Natural Hazard Reduction.* Washington, D.C.; National Academy Press.

Cutter, S.L., J.T. Mitchell, and M.S. Scott. 2000. Revealing the Vulnerability of People and Places: A Case Study of Georgetown County, South Carolina. Annals of the Association of American Geographers. 90 (4): 713-737.

Morrow, B.H. 1999. Identifying and Mapping Vulnerability. Disasters 23 (1): 1-18.

Objective 14.1 **Discuss the effects of changing demographics**

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Demographics play an important role in our understanding of both the potential human impacts of disasters and how people will respond to and recover from them (Cutter 2001). **Several demographic trends are crucial to this understanding. They include:**

- ***Rapid urbanization and migration from rural areas*.** The growth of urban or suburban locales can significantly increase the exposure to hazards, particularly in areas that are located in known high hazard areas (Cutter et. al. 2000, Heinz Center 2000, Morrow 1999). **Specific examples include:**
    - Los Angeles (earthquake);
    - Miami (hurricane); and
    - New Orleans (Hurricane, flood).
- ***An eventual shift from a white to Hispanic majority in the United States.*** This is due to both higher growth rates among Hispanics than whites and a declining mortality rate among Hispanic children. **This change has several important implications, including:**
    - A need to address issues unique to Hispanic residents, including language, cultural and political factors.
    - Over time, Hispanics may assume greater political power to alter the status quo, including a more responsive emergency management system that reflects their needs.
- ***The growing number of non-English speaking persons in the United States*.**
    - Hispanics and Asians

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- ***A growing elderly population.*** **As our total population ages, the emergency management system will be confronted with age-specific challenges. They include:**

    - A growing number of hospitalized, infirmed, and less mobile individuals who rely on others for their care and safety.

    - The elderly require additional assistance during response and recovery efforts, including help with their evacuation and recovery assistance needs. This may necessitate physically relocating individuals, providing medical aid during evacuations and assistance filling out recovery program paperwork.

- ***The migration of individuals to high hazard areas, including:***

    - The coast;

    - The urban-wildland interface;

    - Earthquake-prone areas (west coast);

    - Floodplains; and

    - Steep-sloped areas (subject to landslide)

- ***Many hazardous areas are often attractive to individuals based on quality of life factors, including climate[1], reduced congestion[2], scenic beauty[3] or a lower cost of living.***

[1] Numerous individuals move from colder northern cities to warmer locations, including Florida, the south east and gulf coasts. Many are unaware of the potential impacts associated with hurricanes and coastal storms. As a result, the level of social vulnerability increases in these areas.

[2] The movement of people from cities to more suburban locations represents a long-term demographic trend among middle and upper income whites. While more recent demographic studies suggest a movement back to downtowns, the larger shift to suburban living remains. As communities continue to expand outward from the city core, the effects of sprawl has resulted in settlement patterns that challenge emergency managers to perform their duties, including development into hazardous areas that were once farmland, forested lands or open space.

[3] Scenic areas are frequently known high hazard areas. Specific examples include: barrier islands and coastal property, rivers and streams, steep sloped areas and woodlands.

14.2 Discuss the role of technology in recovery

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In the last decade there have been several advances in technology that have been adopted by emergency management practitioners. Specific examples include:

- ***Geographic Information Systems.*** GIS, or Geographic Information Systems, enable the user to display and analyze geographically referenced data. While the creation of maps are often the most widely recognized feature of GIS, the true power lies in the ability of individuals to perform analyses. In the context of disaster recovery, the ability to display and analyze information enables emergency managers, planners and policy makers to make better decisions. **Specific applications of GIS may include:**

    - The identification of hazards and the assessment of their damage potential;

    - Assist in the identification of at-risk populations (e.g. elderly);

    - Determine the most effective routes to respond to an event or deploy other needed resources; and

    - Geographically analyze the types of damages sustained following a disaster.

- ***Remote Sensing.*** The use of remote sensing data has become increasingly utilized by emergency managers. Remote sensing involves the use of images collected from either fixed wing aircraft of satellites. **Useful information may include:**

    - Flood inundation levels;

    - Aerial damage images; and

    - Heat variations associated with wildland fires.

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- ***Computer modeling*.** The ability to simulate differing hazard scenarios can serve as both an effective training tool and a means to assess potential impacts to specific sites, communities, states and regions prior to their actual occurrence. By simulating possible impacts, emergency managers are able to train for and take action to limit their impacts without actually experiencing a disaster.

    - 3 and 4-dimensional modeling and simulation allow emergency managers to visualize in a more realistic way the possible impacts associated with disasters. These images can prove to be an effective tool to educate residents, builders and elected officials about the potential impacts of land use and construction techniques on local hazard vulnerability.

- ***Risk Assessment Tools.*** The ability to quantify risk provides emergency management practitioners with information that can be used to improve decision making. **Challenges facing users include:**

        - Determining an acceptable level of risk;

        - Establishing comparable baseline data used to conduct risk assessments;

        - Effectively interpreting and disseminating the results; and

        - Developing methods that can be used by a range of stakeholders that possess varying levels of technical sophistication.

    - Hazards US – Multi-Hazard (HAZUS-MH) represents an example of a loss estimation tool developed by FEMA and the National Institute of Building Sciences. HAZUS runs on a GIS-based platform (MapInfo) and is designed to assess potential losses based on a national inventory of the built environment, demographic and economic data and specific geographically referenced hazard characteristics. Originally designed to assess earthquake impacts, HAZUS-MH has been expanded to assess losses associated with flooding (coastal and riverine) and high winds.

Specific loss estimates include:

- Number and type of buildings damaged;
- Estimated repair costs;
- Number of casualties;
- Number of people displaced; and
- Damages to infrastructure (lifelines).[4]

Additional applications include the integration of HAZUS-MH with human-caused hazards including chemical releases, dirty bomb scenarios and bomb blast assessment techniques.

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- ***Computer-based communications.*** The creation and widespread use of the internet and the World Wide Web have dramatically changed the way in which information is obtained and shared with others. In the context of disaster recovery, the ease at which pertinent information can be collected and shared can facilitate a more sustainable recovery. The access to, for example, relevant recovery planning techniques or lessons learned from others is readily available for those that have access to the internet.

Adapted from Disasters By Design: A Reassessment of Natural Hazards in the United States. 1999. Chapter 8: Innovative Paths and New Directions. Pp.241-265.

[4] It is important for the instructor to note that HAZUS and other probabilistic loss estimation techniques are based on computer modeling and provide estimates based on the data available and the inherent limitations of the model.

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Technological Issues and the Future of Recovery

The following issues represent a series of thoughts that are believed to represent the promises and challenges of effectively harnessing the power of technological advances.

- The use of data management techniques and technology to aid in decision making, including the identification of complimentary objectives across programs, will shape the future of emergency management.
    - Mitigation and terrorism planning, risk and threat assessments, floodplain mapping, grants and database management, effective response, including the timely deployment of resources, and even issues associated with accreditation necessitate gathering, analyzing and displaying data.
    - The ability to use this information to bring groups together will be required in an era of shrinking state and local emergency management budgets, increased federal expectations and the rapid development in known hazard areas.
    - The application of technological advances can provide the vehicle through which available resources can be optimized.
- The widespread adoption of technological advances, however, must be done with a thorough understanding of all stakeholders and their access to and use of technological tools and resources.
    - For example, many locales may not possess the fiscal, technical, nor administrative capability to purchase, use or maintain the tools or data adopted by another. Therefore, unless all stakeholders can be brought up to a defined baseline level, effective interoperability and the sharing of information will suffer.
    - Accreditation can play a role. The use of technology must be balanced with an understanding and respect for how proposed advances promote or detract from horizontal and vertical integration.
    - The approach chosen must provide alternatives to smaller jurisdictions to achieve similar aims via a simplified methodology that is affordable and user-friendly.

- For the most part, the advances discussed above provide the tools needed by federal, state and local emergency management officials to make improved decisions.

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- **However, the use of technology must be tempered by several factors that affect their utility. They include:**

  - An over reliance on technology;

  - Attempting to utilize tools that exceed the technical, fiscal or administrative capability of the user; and

  - Establishing mechanisms that enable users to effectively share information and communicate across jurisdictional boundaries when differing approaches and tools are used. In the emergency management community, this term is usually referred to as ***interoperability***.

14.3 Discuss the concepts of professionalism and accreditation

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The ability of state and local emergency management agencies to sustain a comprehensive program is extremely difficult. Part of this difficulty stems from the failure of elected officials to fully recognize what emergency managers do and their role in public safety. Emergency Managers have yet to be viewed as an equal to other governmental functions at both the local and state level. **Several factors contribute to this dilemma.**

- At the federal, state and local level, emergency management is not fully understood by members of Congress, legislators and locally elected officials responsible for the provision of funding needed to maintain a comprehensive program.

- Emergency managers are among the lowest paid professions when compared to other municipal, county and state jobs. As a result, it remains difficult to maintain adequately trained staff.

- Historically, local emergency managers have tended to focus on response-related duties. In many cases, emergency managers began their careers in jobs with a response orientation. Specific examples include police, fire and emergency medical technicians. This too, however, is gradually changing.

- Today's emergency manager is increasingly involved in grants management, planning and the use of evolving technology to obtain and assess data in order to make decisions and establish policy.

- The emergency management community is just beginning to adopt widely recognizable standards which describe a set of principles and skills that define the profession.

    - Many professions, including those as diverse as architects, engineers and fire fighters, have a widely accepted method of accreditation. Other professions have developed certification programs including land use planners and floodplain managers.

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The **Emergency Management Accreditation Program** (EMAP) was created in order to develop a consistent set of criteria that could be used to evaluate state and local emergency management agencies and broader organizations.

- The evaluation process involves the assessment of 14 emergency management functions and 54 standards.

- The standards were developed by a team of state, local and federal emergency management practitioners. [5]

- States and local governments willing to submit themselves to the evaluation process are assessed by an independent review team of experts in the various functional areas.

- In addition to the on-site assessment, states and local governments are required to submit documentation validating their claims.

[5] The EMAP is a non-profit organization, developed to manage the emergency management accreditation process. Assistance and support is provided by the National Emergency Management Association, International Association of Emergency Managers, U.S. Department of Justice Office of Justice Programs, Federal Emergency management Agency, U.S. Department of Transportation, The Council of State Governments, National Governors Association, National League of Cities and individual states.

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- **The primary goals of the EMAP program include:**
  - An established structure for identifying areas in need of improvement;
  - A methodology for strategic planning and justification for resources;
  - A catalyst for improved interoperability and professionalism; and
  - Strengthened state, territorial, and local preparedness, including the sharing of best practices.

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- **The EMAP standards address 14 functional areas. They include:**
  - ***Program Management.*** This functional area addresses how the program is structured and organized in order to effectively coordinate emergency management preparedness, mitigation, response and recovery activities across multiple agencies and organizations;
  - ***Laws and Authorities.*** Most emergency management duties are tied to existing federal, state or local laws and authorities to act. This functional area addresses the legal underpinnings necessary to authorize and conduct an emergency management program.
  - ***Hazard Identification and Risk Assessment.*** The identification and assessment of hazards enables the emergency manager to base their decisions on a sound understanding of existing vulnerabilities. This functional area requires a comprehensive identification and assessment of risk, including potential natural and human-caused events and their potential impact. The hazard identification and risk assessment results should be incorporated into all planning processes.

- ***Hazard Mitigation.*** This functional area requires that a process to lessen the impacts of disasters is created and implemented over time. The approach must take into account the results of hazard identification and risk assessments, and must prioritize mitigation projects based on an overall loss reduction strategy.

- ***Resource Management.*** This functional area involves establishing methods that ensure the prompt and effective identification, acquisition, distribution, tracking, and use of personnel and equipment needed for emergency functions.

- ***Planning.*** The process of planning for disasters is a key function of an emergency management organization. **Specific evaluation criteria include:**

    - The development and general content of the program's:

    - Emergency operations plan;

    - Strategic plan;

    - Mitigation plan;

    - Recovery plan; and

    - Continuity of operations plan.

- ***Direction, Control and Coordination.*** This functional area requires that emergency management personnel are able to analyze a situation, direct and coordinate response forces and resources, and coordinate with other jurisdictions. The use of the incident management system is required.

- ***Communications and Warning.*** The ability to effectively communicate across varied constituencies and warn the public is a central role of emergency management professionals. Key standards assessed include communications interoperability and redundancy.

- ***Operations and Procedures.*** This functional area requires standard operating procedures, checklists and other instructions to execute the emergency operations plan and other plans. Specific protocols are required that tie procedures back to the hazards previously identified by the jurisdiction.

- ***Logistics and Facilities.*** The effective distribution of resources before, during and after a disaster requires a sound logistics capacity, including the facilities and staff necessary to accomplish this mission. This functional area requires facilities and a logistics framework capable of supporting response and recovery operations. This includes the requirement for an emergency operations facility.

- ***Training.*** This functional area requires that the program maintain a documented training program for emergency management/response personnel and public officials. Emergency management personnel are required to receive training on the incident management system.

- ***Exercises, Evaluations and Corrective Action.*** This functional area calls for regularly scheduled exercises, evaluations and a process for implementing corrective actions.

- ***Crisis Communications, Public Education and Information.*** This functional area requires the establishment of procedures for disseminating information to the public before, during and after a disaster.

- ***Finance and Administration.*** This functional area requires the existence of a financial management framework that complies with applicable government requirements and allows for expeditious request for and receipt and distribution of funds.

The discussion of the Emergency Management Accreditation Program was modified from a flyer titled: Emergency Management Accreditation Program. February 2004. See http://www.emaponline.org

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EMAP and Sustainable Disaster Recovery

The Emergency Management Accreditation Program reflects the current system in place, which is focused on the administration of programs rather than a holistic view of all aspects of the profession and how they are integrated. This is particularly true as it relates to the evaluation criteria used to assess disaster recovery readiness.

- Emphasis is placed on the administration of federal recovery programs. Limited attention is placed on how these programs can be used to achieve broader sustainable reconstruction and recovery objectives.

- Recovery planning is mentioned in the sixth functional area - Planning. However, there is limited discussion of how pre-disaster planning affects the physical, social and economic reconstruction of an impacted area. Nor is there an evaluation mechanism in place to evaluate the identification of post-disaster multi-objective opportunities.

- The EMAP process focuses on the assessment of existing documents, not necessarily how these documents are actually utilized before, during and after a disaster. As was mentioned in previous sessions, the existence of a recovery plan does not guarantee that it will be used, nor does it necessarily lead to a successful recovery. However, an emphasis should be placed on the actual field evaluation of plans and programs during an actual disaster.

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Accreditation and Accountability

- According to James Wilson: "No agency head can ever achieve complete autonomy for his or her organization; politics requires accountability, and democratic politics implies a particularly complex and all-encompassing pattern of accountability. The best a government executive can do is to minimize the number of rivals and constraints" (1989, p.188).

- In the case of the federal-state-local relationship present in disaster recovery, the accreditation of state, local and (emphasis added) federal agencies tasked with disaster recovery represents one method that may bridge this divide.[6]

[6] A federal accreditation program does not currently exist to assess the capability of FEMA to perform their duties.

- In order for this to work, states and local governments need to identify the resources necessary to develop and maintain a comprehensive emergency management organization.

    - In many cases, states are unwilling to commit the resources needed to sustain a strong emergency management program. This is particularly true of recovery capabilities. **Several factors contribute to this dilemma:**

        - States are over-reliant on post-disaster federal assistance;

        - State elected officials do not fully understand the role of state emergency management organizations in recovery; and

        - State officials may be unwilling to invest in programs that are not regularly used.

- Due to the factors presented, states possess a wide range of capabilities.

    - Thus, when FEMA arrives in a state post-disaster, preconceived ideas and stereotypes may be formed and applied universally until a state can prove otherwise.

    - Meaningful state autonomy, driven by proposed federal initiatives like the Managing State and Cooperating Technical Partners, will succeed when the organizational culture found within FEMA changes from one of paternalism to true partnership.[7]

- This requires that states and local governments increase their capability to address the full range of expertise needed to effectively manage disaster response, mitigation, preparedness and recovery.

- In most cases, states are over-reliant on federal assistance rather than committing the resources needed to accomplish necessary tasks.

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[7] The Managing State Program is a FEMA – sponsored effort to divulge additional grants management duties to the states if they can demonstrate a sound management of mitigation and recovery programs. The Cooperating Technical Partners is a program that enables state and local governments to take on greater responsibility for the mapping of their floodplains. **Note:** In some instances, FEMA officials view capable state emergency management staff as potential rivals and federal programs that seek to divulge authority to states as threats to their job responsibilities.

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- Disaster-based funding is not enough. States must take a greater responsibility to develop a comprehensive program that is funded predominantly with state funds.

- Otherwise, states become too dependent on federal assistance and the cycle of paternalism continues.

- The problem arises when state legislatures, like many governing bodies, react to issues that are most salient.

  - Appropriating the state funds needed to develop and maintain state and local capability requires legislators and locally elected officials to choose among competing programs.

- When federal funds can be obtained for this purpose, states and local governments become reliant on these funds rather than building capacity from within.

- **Developing and retaining a sound cadre of experts at the state and local level are difficult, due to several factors. They include:**

  - Generally poor pay relative to other state and local agencies;

  - Heavy work loads; and

  - Higher paying opportunities in the private sector and FEMA.

14.5 Discuss the role of academia in recovery

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- ***Training the next generation of emergency management practitioners and scholars*.** Universities and community colleges play a key role in preparing the future emergency manager for the fundamental shift that is occurring in the field.
    - Perhaps one of the most important lesson that a university can provide to its students is the ability to critically analyze complex systems, looking for ways to integrate apparently divergent tasks as a means to better achieve multiple goals and mutually beneficial outcomes.
- ***Balancing scholarship and practice.*** In order to be truly effective, scholars must ground theoretical discussions with actual disaster experience.
    - Educators can get involved by working collaboratively with FEMA and state officials in actual disasters as Disaster Assistance Employees, or through the nation-wide Emergency Management Assistance Compact.
    - Conducting field research or co-teaching courses with practitioners represent two other possible approaches.
    - Students should seek out internships that introduce them to the realities of emergency management within the current local, state and federal system.
    - By better understanding the political nature of disasters and a more accurate understanding of the varied capabilities of governments to engage in different aspects of the profession, students will be better equipped to apply knowledge gained in school once they graduate.
    - Both approaches will translate to the classroom through a richer and more reality-based learning experience for students and professors.
    - Technical training in areas such as Geographic Information Systems, database management, accounting and public administration are also important as emergency managers move toward an increased use of technology.

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- ***Technology transfer*.** It is incumbent on Universities to engage in applied research and effectively disseminate the results of their finding to practitioners in the field.

    - Emergency management research institutes across the country, generally do a poor job of transferring research findings to practitioners. This is a major problem that must be addressed, particularly in the light of the evolving role of emergency managers.

    - Providing the practitioner with a user-friendly guide to research findings and proposed recommendations for action, is critically underutilized. In order to make this happen, Universities must alter the current reward system that does not encourage applied research.

    - The current system does not adequately reward applied research. Rather, promotions are typically tied to the generation of journal articles and books that are typically not read by those who stand to gain the most from this information.

    - In order to more effectively meet the needs of the emergency management profession, greater emphasis should be placed on a reward system that encourages research geared to the practicing emergency manager.

- ***The role of the hazards research institute*.** Linking research and practice can utilize existing distributional frameworks like the state extension service, community college system, sea grant programs or the array or university research institutes.

Adapted from a presentation to the Emergency Management Institute, Higher Education Project Summer Conference, The 21st Century Emergency Manager. Miami, Florida (Smith, 2002).

14.6 Improving the disaster recovery model in the United States

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The current disaster recovery process is not governed by an effectively integrated system. Rather, recovery in the United States is better characterized as a series of programs without a guiding framework for action (Mileti, 1999). The disaster recovery model in the United States is in need of serious repair. Major changes are needed to address problems that face states and local governments following every disaster.

- **Achieving Success through Sustainable Redevelopment and Multi-Objective Planning.**

  - ***Encourage and reward sound pre and post-disaster recovery planning.*** States and communities that develop pre-disaster recovery plans and those that are willing to embrace sound adaptive planning are more likely to achieve a more sustainable recovery than those that do not (Schwab, et. al.). **Specific rewards may include:**

    - Greater latitude to spend federal dollars based on identified needs. This would necessitate an improved level of coordination across federal agencies who disburse funding both pre and post-disaster;

    - Reduced cost-share requirements for federal funding;

    - Conduct qualitative and quantitative research that describes the effects of pre and post-disaster planning and disseminate the findings among emergency management practitioners. Limited research has been conducted in this field and much more needs to be done.

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  - ***Take advantage of available resources.*** The recovery process following federally declared disasters is shaped by an array of federal funding programs triggered by a disaster, rather than seeking the means to address localized problems.

    - The over-reliance on funding can stifle the creativity that is crucial to the successful implementation of a comprehensive approach to sustainable redevelopment.

- ***Build consensus through participatory planning*.** Past societal, environmental and economic dilemmas that have been faced by the community can be addressed during this relatively short period of time. This necessitates the creation of a truly participatory process that involves gathering and using input from multiple stakeholders.

    - Consensus-building measures must be implemented to capitalize on local expertise and understanding of the socio-political milieu, while identifying those individuals that can identify possible connections across organizational missions.

        - Communities that have adopted multi-objective planning are familiar with this approach.

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- ***Disasters as opportunity.*** In many cases, the convergence of factors facilitating significant change may never occur again. The time may be ripe for positive change.

    - The search for solutions to problems identified post-disaster must be viewed as an opportunity to not only solve direct, disaster related impacts, but also those that may have existed in the community well before the event.

    - This requires recovery advocates and technical experts capable of linking available resources to achieve desired objectives.

    - Numerous researchers have identified problems in the current recovery model that are tied to the poor fit between local needs and federal program rules (Berke, Kartez and Wenger 1993).

    - Disasters can result in elected officials, citizens and government officials rethinking how they choose to rebuild their community. However, altering the status quo requires political leadership and a team of committed individuals (including technical experts, citizens and business leaders).

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- ***Build federal, state and local capability and commitment.*** Enhancing federal, state and local capability and commitment to sustainable recovery requires improving the technical skills needed to develop and implement meaningful recovery plans. These skills do not currently exist on a widespread level at any level of government.

    - Developing this capability will require a nationwide training program aimed at federal, state and local stakeholders.

    - **In order for training to be effective, an increased level of commitment, particularly at the federal and state levels are needed. Specific steps include:**

        - Establishing a series of training courses on sustainable recovery planning. The courses should be available on a nationwide basis. **Teaching venues may include:**

            - The Emergency Management Institute;

            - Web-based or on-line training;

            - Train the Trainer courses for state and local government officials;

            - Training at relevant national conferences and seminars; and

            - The Disaster Field Office following a disaster.

    - Adopting a broader view of recovery will necessitate rethinking how current recovery programs are implemented.

        - This will necessitate a change in organizational culture at FEMA and State Emergency Management Agencies.

- Developing baseline recovery planning standards. In order to effectively train stakeholders in recovery planning, a sound description of what a recovery plan is will require some degree of standardization.

    - This approach must be tempered by the recognition that state and local plans must remain flexible enough to capture local capabilities, varied stakeholder groups and existing regulatory frameworks.

- Evaluating post-disaster planning and make changes based on lessons learned.

    - It is critical that procedural improvements and the addition of specific action items are based on a system that accounts for past experience, whenever possible.

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- **Social Learning: Building on Existing Strengths and Eliminating Chronic Weaknesses**

    - Following Disasters states and FEMA typically generate "after action" reports announcing the successes associated with recovery.

        - **Specific documents may include:**

            - FEMA Disaster Recovery Task Force Reports;

            - President's Action Plans for Long-term Recovery and Redevelopment; and

            - Hazard Mitigation Success Stories.

        - Reports tend to focus on the administration of existing federal grant programs.

        - Rarely do reports address significant institutional or programmatic changes in an entrenched system that limits innovation.

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- **Specific improvements that would facilitate an improved sharing of lessons learned include:**
  - Emphasizing the stated role of the Emergency Management Accreditation Program to share lessons learned;
  - Emphasizing the development of lessons learned that critically evaluate strengths and weaknesses of post-disaster recovery across all stakeholder groups;
  - Developing an improved means to more systematically disseminate findings to emergency management practitioners and scholars.

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- **Sustainable Disaster Recovery – The Forgotten Side of Emergency Management**
  - Disaster recovery is the most ill-defined and complex component of emergency management (Berke, Kartez and Wenger, 1994).
    - Researchers and practitioners alike have struggled with how to clearly define the process and the steps necessary to affect a comprehensive recovery.
    - It should not be surprising that emergency managers, when faced with a seemingly endless number of tasks associated with the post-disaster environment, tend to focus on the administration of existing (federal, state or local) recovery programs rather than attempt to step back and tackle the broader, sometimes endemic problems facing a community that are frequently exacerbated by a disaster.

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- Compounding this problem is the fact that local emergency managers are typically focused on the response to localized emergencies and larger scale disasters.

- While the immediate response to disasters involve local emergency managers, the recovery from and mitigation against disasters are typically undertaken by a different set of local officials.

- Specific recovery activities are more likely to be performed by land use planners, public works personnel, building inspectors and flood plain administrators.

    - Research conducted by Kartez and Faupel (1994) has shown that effective coordination between emergency managers and land use planners, for example, is limited.

- States and FEMA have taken on greater recovery responsibilities in the recovery arena. These efforts, however, are typically driven by existing federal recovery funding streams.

- Following disasters that do not meet the federal threshold for assistance, states vary widely in their level of assistance, particularly tasks associated with long-term recovery.

- State and federal roles in recovery and mitigation are still evolving. Response-related roles tend to be more clearly defined.

- This is due, in part to the roots of emergency management as a profession. Most emergency managers still rise from within a response orientation.

    - Furthermore, many of whom are now in management positions rose from within the organizational culture of civil defense.[8]

[8] The terrorist attacks on the World Trade Center and the Pentagon has resulted in an apparent shift in FEMA policy, moving back towards an emphasis on many of the premises underlying the former Department of Civil Defense.

- This focus, which continues to influence emergency management, is founded on the basic premises of preparedness and response capabilities.

    - Many state and federal officials began their careers in emergency management as first responders (EMS, Fire, Police).

    - More recently, a cadre of emergency management professionals are graduating college with a degree or specific coursework in the emergency management field.

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- **Improving the Link Between Mitigation, Preparedness, Response and Recovery**

    - Whenever possible, stakeholders should attempt to develop pre-disaster recovery plans that integrate preparedness, response and mitigation actions with recovery objectives. **Specific examples include:**

        - Notifying homeowners post-disaster about specific preparedness and mitigation measures that could be implemented in their home or business;

        - Pre-identifying specific mitigation projects that may be implemented with post-disaster funding;

        - Developing response plans that codify the roles and tasks necessary to facilitate a smooth transition from response to the early phases of recovery.

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- **Improving the Link Between Data and Planned Outcomes**

    - ***Improvements in the Assessment of Hazard Risk.*** In order for communities to make sound decisions, better information must be developed that informs decision makers about not only the presence of hazards, but a better understanding of their probability and expected damages (Petak and Atkisson 1982).

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- **Coordination and Cooperation Across Organizations**
    - ***No Federal Coordinating Mechanism – Where's the Plan for Recovery?***
        - In order to facilitate necessary change, a meaningful federal recovery plan should be developed that identifies shortcomings in current recovery program design with an emphasis on the identification of local needs post-disaster and ways in which federal programs can be altered to meet these needs.
        - Federal recovery plans should hold state's more accountable for the provision of state and local aid that may run counter to sustainable recovery objectives.
        - FEMA is constrained to some extent by existing programmatic regulations established in law.
            - This does not mean that both federal and state agencies tasked with recovery should not establish an inter-organizational task force charged with identifying chronic problems in the system and making meaningful recommendations for change.
        - In order to be effective, local government and non-profit representatives should be key players in this effort.
            - This group should be charged with not only developing a practical plan that is functional and can be used to improve the pre-disaster planning process, it should also address the realities of the post-disaster environment in which adaptive planning is frequently employed.
    - The Federal Response Plan is designed to bring together 28 federal agencies and the Red Cross following disasters.[9] It does not, however,

[9] The 28 federal agencies tasked under the Federal Response Plan include the Department of Agriculture, Department of Defense, Department of Energy, Department of Housing and Urban Development, Department of Justice, Department of Commerce, Department of Education, Department of Health and Human Services, Department of the Interior, Department of Labor, Department of State, Department of the Treasury, Agency for International Development, Environmental Protection Agency, Department of Transportation, Department of Veterans Affairs, American Red Cross, Federal Communications Commission, General Services Administration, Interstate Commerce Commission, National Communications System, Office of Personnel Management, US Postal Service, National Aeronautics and Space Administration, Nuclear Regulatory Commission, Tennessee Valley Authority, Corps of Engineers, and National Oceanic and Atmospheric Administration. The Federal Response Plan has, more recently, been incorporated into the National Response Plan.

provide a planning framework designed to link local and state needs nor address issues beyond the administration of federal aid programs. At the time this document was finalized, the Department of Homeland Security was vetting the new National Response Plan, which attempts to link local, state and federal response via the newly created National Incident Management System (NIMS).

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- **The Role of Insurance**
    - The role of hazards insurance needs to be revisited as a potentially effective mechanism to guide future development away from known high-hazard areas rather than a tool that actually encourages risky development practices.
        - Like disaster aid programs, insurance can increase the amount of property exposed to known hazards. Subsidizing risk leads to poor land-use decisions regarding where people build in relation to hazards.
            - Insurance can produce complacency among policyholders; and
            - Easy access to insurance can encourage more intensive pre-disaster development and post-disaster redevelopment without sufficient attention paid to the incorporation of mitigation measures into reconstruction.
        - The development of insurance premiums that accurately reflects risk will limit the total investment in high hazard areas. As risk based premiums increase, many people will make rational economic decisions to limit investments in these areas.
        - Those that can afford to invest in high hazard areas will continue to do so.
            - The allure of property in high-risk areas, such as oceanfront property or a home on a steep hillside overlooking a scenic vista, will continue to become increasingly limited to the rich.
            - While the total number of properties may decrease, the wealthy, who will continue to invest in high risk properties, tend to build larger structures in these areas.

        - Evidence of this can be seen in more recent construction of ocean front properties along the east coast.

- In order to remain solvent following catastrophic events with large payouts, insurance companies must spread losses across a range of policyholders.

    - Many individuals and companies do not view disaster insurance as necessary in lower risk areas.

- Some have called for an expansion of existing federal and state government insurance.

    - The federal government currently provides flood insurance at subsidized rates.

        - In Texas, Florida and North Carolina, state insurance is available to cover wind-related damages. Earthquake insurance is readily available in earthquake-prone states.

- The proposed creation of an all-hazards insurance program, backed by the federal government, failed to pass Congress in 1994 and 1995.

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Class Discussion

Should the federal government provide all hazards insurance to willing policy holders?

The following discussion points may be used to stimulate discussion among students.

- **Arguments against federal all-hazards insurance include:**
    - The federal government should not be in the business of providing insurance which encourages development in high hazard areas;
    - Developing a solvent all-hazards insurance program is impossible given the reluctance of low risk areas to purchase an adequate number of insurance policies to cover urbanized high risk areas.
    - The National Flood Insurance Program has encouraged development in known high hazard areas;
    - Should a catastrophic disaster occur, the federal government will sustain a major economic hardship; and
    - Providing risk-based all hazards insurance will limit housing options in high hazard areas to the wealthy.
- **Arguments for federal all-hazards insurance include:**
    - Properly developed, risk-based premiums will reduce the total exposure to hazards;
    - Linking hazard premiums to the adoption of hazard mitigation techniques may encourage their use; and
    - Federal sponsorship may increase the legitimacy and widespread use of this type of insurance.

(Slide 14-31)

- **Crafting Policy in the Pre and Post-Disaster Environment: The Role of Participatory Planning, Negotiation and Policy Dialogue**

    - Historically, those involved in policy making have, all too often, emphasized the end product while neglecting the critically important involvement of those who stand to benefit.

    - While the idea of public involvement is commonly acknowledged as a worthy goal, it is often underutilized, negating a valuable and naturally occurring informational source that, when properly utilized, sets the stage for identifying creative solutions.

    - Participatory planning is a contentious process, involving numerous, usually conflicting stakeholders, voicing an opinion concerning the continually changing valuation of issues.

    - An advocate, mediator or assigned party can facilitate action through the equitable inclusion of the opinions and technical information within a framework conducive to public involvement.

    - The ability or inability to obtain information in both the pre and post-disaster environment plays a crucial role in recovery. Access to good, verifiable data is fundamentally important to assist stakeholders engaged in policy dialogues.

    - Negotiation in the post-disaster environment occurs on a daily basis. The magnitude of these negotiations vary, yet they frequently involve millions of dollars and impact the speed and degree to which disaster victims recover from disasters.

        - The ability of states and local governments to effectively negotiate and obtain desired aims is one of the most important policy making skills to possess when implementing federal and state recovery programs.

        - Learning basic negotiation and dispute resolution skills should be a prerequisite for all emergency managers who are tasked with policy formulation.[10]

[10] Several texts address policy dialogue, negotiation and dispute resolution. Among the most useful for the practitioner are: Getting to Yes: Negotiating Agreement Without Giving In (Fisher and Ury 1981), Breaking the Impasse: Consensual Approaches to Resolving Public Disputes (Susskind and Cruikshank 1987 and The Art and Science of Negotiation (Raiffa 1982).

- Those that study dispute resolution have suggested that dispute resolution techniques, namely negotiation, be mandated as a means to address public policy conflicts, given the success of these techniques to resolve multi-party disputes in the environmental arena, for example (Brock and Cormick 1989, Fiorino 1988).

- Implementing this approach requires the modification of existing entrenched administrative and legal systems.

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- **According to Brock and Cormick (1989) institutional change can occur given the existence of a number of factors. They include:**

  - The parties must agree that the use of negotiation makes sense relative to past approaches;

  - Decision makers must be intimately involved in the process, an advocate or "champion" should be identified that can move the process forward; and

  - The issues must be clearly defined and the overall effort should be framed in a flexible manner, thereby allowing participants to develop an "informed consensus." (pp. 161-164).

- Dispute resolution principles provide insight into the formulation of recovery policy formulation.

  - For example, it is not uncommon for state and federal policy to vary depending on the size and location of a disaster. This phenomenon can be explained, in part, using the principles of negotiation and dispute resolution.

  - The ability to negotiate is tied directly to one's bargaining position relative to others involved in the process. **Issues enhancing one's position may include:**

    - Access to power;

    - Attention of the media;

    - The possession of information, skills, goods or results that are desired by another stakeholder; and

    - Access to information.

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- **The Role of Adaptive Planning and Innovation: Rewarding Success**
    - The current literature has suggested that pre-disaster planning has been shown to significantly improve the ability of local, state and federal organizations to prepare for, respond to, mitigate against and recover from disasters.
    - For those that do not necessarily develop clear operational guidance for post-disaster recovery, can they too, recover effectively?
        - Success in emergency management frequently requires adaptive planning, particularly in the immediate response to and recovery from disasters.
    - Improvisation can lead to the development of innovative ways to tackle a problem.
        - **The willingness of agencies responsible for the distribution of monetary or technical aid to reward innovative thinking can help to reduce the following problems:**
            - Inefficiency;
            - Outdated organizational cultures; and
            - Reluctance among organizations to alter the status quo.

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- **In order to facilitate positive change, federal, state and local governments should establish the means to reward innovation that leads to a more sustainable recovery. Specific rewards may include:**
    - Public recognition;
    - A recognized mentoring program for state and local government officials;
    - Increased autonomy as it relates to the administration of pre and post-disaster recovery programs; and
    - A reduction in cost sharing requirements associated with federal or state grant programs.

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- **Breaking the Cycle of Federal Paternalism: Enhancing State and Local Capability**

    - The current recovery system implemented following a federally declared disaster encourages a high level of federal paternalism. **Several factors represent the root causes of this self perpetuating cycle. They include:**

        - Episodic periods of federal assistance immediately following disasters that involve the large distribution of federal dollars to local governments. This creates a high degree of state dependence.

        - States and local governments are not held accountable for their actions.

    - The primary means to disrupt the cyclical nature of federal paternalism is to improve the capability of local and state agencies tasked with the implementation of federal programs and hold them accountable for their actions. Until this happens, the relationship will remain asymmetric.

    - Enhancing capability with federal funds may or may not result in a true partnership. Rather, the most direct way to achieve equality is for local or state agencies to identify non-federal sources of funds whenever possible to achieve this goal.

        - A key premise of the Disaster Mitigation Act of 2000 is enhancing local and state responsibility, linking pro-active pre-disaster planning to specified incentives and penalties associated with compliance.

        - The Pre-Disaster Mitigation fund, established in the Act, provides some funding to states and local governments to develop and enhance their pre-disaster plans.

        - It does not, however, provide the funding or technical assistance needed to sufficiently build and institutionalize a level of capacity commensurate with the tasks required to implement the rules promulgated by FEMA.

        - In order for the Act to prove successful in it's intent to reduce the vulnerability of states and local governments to hazards, non-federal partners (i.e. local and state governments) must enhance their commitment to this effort, through a greater emphasis on monetary, technical and political support.

- Otherwise, the high standards established by FEMA will prove insurmountable, thereby effectively reducing the likelihood of attaining the intent of the Act.

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- **Creating a Sustainable Disaster Recovery Ethic**

Local governments are the most directly affected by disasters, yet are typically the least prepared to address the challenges associated with recovery. **In order to facilitate the creation of a sustainable disaster recovery ethic, several factors must be considered. They include:**

- ***Educating local decision makers and elected officials.*** In order to meet the long-term, sustained needs associated with sustainable recovery, local officials must be aware of the benefits of investing in resources, plans and programs prior to a disaster. Practitioners should attempt to identify those aspects of sustainable recovery that appeal to differing local constituents that are in charge of policy making and allocation of resources. **Specific benefits include, but are not limited to:**

  - Better protecting lives and property;
  - Increasing economic viability; and
  - Enhancing the quality of life.

- ***Integrating sustainable recovery principles into the day-to-day decision making and operations of local government agencies and stakeholder groups.*** Creating a sustainable recovery ethic requires institutionalizing its principles into the daily operations of those charged with governmental services and community welfare. Therefore, all relevant stakeholder groups should be challenged to accomplish this goal.

- ***Land use, hazards management and sustainable recovery.*** A sustainable recovery means addressing the problems posed by recent disasters as well as those faced by future generations. Making sound land use decisions regarding future development is a powerful technique used to limit future exposure to hazards and more effectively manage hazard-related impacts.

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- **Educating Citizens and the Media: Creating a Less Vulnerable Society**
    - The media, including newspapers, television, radio, and more recently the internet, play a valuable role in disseminating information – it's what they do.
    - Effectively harnessing this powerful resource can be a challenge for emergency managers at all levels of government.
        - In most cases the media are significantly underutilized.
        - The stories chosen by the media to report are frequently tied to the identification of problems rather than either the provision of information helpful to communities or individual disaster victims.
        - Negative reporting makes for better copy in the minds of management.
        - Some of the blame for this approach, however, must be shouldered by government.
        - In times of crisis, such as a disaster, governmental agencies are continually reacting to requests from the media who ask for information.
        - One way to counter the overrepresentation of negative reporting is to develop standardized messages prior to an event that explain the recovery process and specific steps that communities and individual disaster victims can take to better access aid post-disaster.
        - The post-disaster period provides an opportunity to convey messages of specific preparedness and mitigation measures that can be taken before the next event.
    - While the past approach of governmental agencies reacting to the requests of the media are beginning to change, many organizations are not aggressively developing messages that can be provided to the media in the immediate aftermath of a disaster.
        - Pre-disaster planning by those responsible for interacting with the media can more effectively capitalize on an untapped market of information.

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- **Creating the Disaster Recovery Act**

The Disaster Mitigation Act established a federally funded mandate to develop and implement hazard mitigation plans. It represents a significant improvement from the past post-disaster mitigation programs. **Would a similar approach work to stimulate the larger task of creating state and local recovery plans? In order for this to be successful, several factors should be considered. They include:**

- The creation of state and local plans should be linked to tangible benefits, including a reduction in the non-federal cost share or increased federal recovery funding based on needs identified in the plan;

- Pre-disaster funding should be made available to develop state and local plans;

- Plans should specify the strategy used to reduce dependence on federal and state resources over a specified time period; and

- **The Disaster Recovery Act should mandate the creation of a federal recovery plan that moves beyond the simple description of recovery programs to include the following elements:**

    - The creation of a national-level risk assessment (ideally provided by the risk assessments conducted at the local and state level as required by the Disaster Mitigation Act)[11];

    - The development of a meaningful federal capability assessment that reviews existing federal agencies, their missions, daily operations and identification of policies that may help or hinder sustainable recovery practices at the state and local level;

    - The development of an enhanced recovery planning agenda, aimed at teaching federal, state and local officials how to develop and implement a recovery plan in the pre and post-disaster environment; and

    - The creation of specific goals, objectives and actions intended to facilitate sustainable disaster recovery at the state and local level.

[11] The risk assessments conducted at the local and state levels as required by the Disaster Mitigation Act are not uniform in their approach. Differing methods have been used, based on the level of available data and technical expertise found at the local and state level. In order to utilize local and state results, a unifying approach, integrating the findings, would be required.

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- **Increased reliance on measurable outcomes/indicators**
    - Decisions made by stakeholders in the pre and post-disaster environment can benefit significantly from good information.
    - **Stakeholders may include:**
        - Local, state and federal policy makers;
        - Elected officials; and
        - Disaster victims.
    - In the policy making arena, the use of measurable indicators are becoming increasingly important. **Specific examples of measurable indicators include:**
        - Indicators of achievement or accreditation (e.g. EMAP);
        - Indicators of reduced hazard vulnerability (e.g. risk assessments); and
        - Indicators of the effectiveness of mitigation measures (e.g. losses avoided studies).[12]

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- **Measurable indicators may be used to:**
    - Provide a defensible rationale for organizations attempting to become an accredited organization; and
    - Determine the wise expenditure of public funds or analyze a given policy. **A specific example includes:**
        - Addressing Office of Management and Budget questions regarding the quantitative (monetary) benefits of spending federal dollars to undertake hazard mitigation projects.

[12] Losses avoided studies are intended to document the benefits of undertaking mitigation actions. Ideally, studies are conducted after a disaster strikes an area that has previously implemented mitigation projects. Damages sustained to structures are compared to those sustained to the same structures after the mitigation techniques have been implemented.

- Indicators of recovery planning benefits have not been quantitatively assessed.

    - The current disaster recovery literature does not effectively address this issue. **Specific areas of future research should include:**

        - The quantitative benefits of pre-disaster recovery planning versus post-disaster adaptive planning;

        - The quantitative benefits of utilizing dispute resolution and policy dialogue in post-disaster recovery;

        - The quantitative benefits of creating multi-party recovery committees; and

        - The quantitative benefits of sharing lessons learned among disaster stakeholder groups.

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Class Discussion

The instructor and students should review *Recommendations for Further Traditional Research* in Mileti's book Disasters by Design: A Reassessment of Natural Hazards in the United States. Particular attention should be paid to recommended recovery and reconstruction-related research. Based on the readings, class assignments and role playing exercises, students should discuss areas that may need further research in addition to that mentioned below.

- **According to Mileti, recommended future research should include:**
    - Recovery and Reconstruction
        - Factors that contribute to a more effective and efficient recovery;
        - Needs of groups that suffer from lingering or late-blooming effects of disasters;
        - How local governments can effectively plan and manage recovery and reconstruction;
        - More attention to decision making at all levels, testing of sustainability as a model for recovery, monitoring and evaluating progress in sustainable development during recovery;
        - Techniques for providing communities with pre and post-disaster information expertise to recover effectively; and
        - Investigation of why the practice of recovery and reconstruction is so poor, given the knowledge, written products, and training courses available.

Adapted from Disasters By Design: A Reassessment of Natural Hazards in the United States. 1999. Dennis Mileti, Editor. Appendix A: Recommendations for Further Traditional Research. Pp.297-314.

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